Note

Title	Deadline 5 and ISH8 Noise Responses		
Project	Gatwick Airport DCO		
Reference	28AD.NT.6.0	**Author(s)**	BHo
Date	24 June 2024	**Reviewer**	VC

Overview

1. The Applicant has provided a selectively limited and fragmented response to our own response note produced for Deadline 4 [REP4-099].

2. Of the sparse new information provided by the Applicant, much contradicts previous information provided, or is not correct on technical matters.

3. This note also sets out our post-hearing submissions with regards to the noise elements of Issue Specific Hearing 8.

4. There remains vast amounts of information outstanding, including matters relating to the primary metrics for the core case, all of which we have attempted to summarise in **Table 2** at the end of this document.

5. We maintain that a revised and updated ES chapter is required from the Applicant, such is the confusion and inaccuracy surrounding their methodology and results. In our experience of aviation expansion applications, the extant noise information provided is inadequate. The resulting description of the consequent noise effects is not sufficient to allow for any permission to be granted.

REP5-072 The Applicant's Response to Deadline 4 Submissions

6. The numbering within this section follows the Applicant's paragraph numbering, for ease of reference. Any references beginning 'NV' are rows within Table 14 within section 2.13.

General Comments

3.3.1 GAL state that, "*Where these comments are similar to those from local authorities, the Applicant's responses are provided elsewhere in this document.*". While we would expect the Local Authority to have similar concerns, as they have also sought professional aviation noise advice, it is not helpful to respond to 'similar' comments with 'similar' responses. This is not the same as actually responding to carefully considered comments and we request that full responses are provided to our concerns.

3.3.2 GAL state:

> *"The CAGNE submission suggests basic information is missing. The Applicant has provided a detailed account of the noise and vibration assessment within the Environmental Statement*

and provided additional explanation of methodology to the local authorities through the Noise Topic Working group during the assessment itself."

We, however, strongly contend that basic information is missing, as summarised in **Table 2** at the end of this note. The table highlights that the information within the ES is insufficient and we do not accept that additional explanation of methodology should only be provided in meetings prior to submission. The appropriate information should be clearly stated within the noise chapter.

We also note that even a cursory glance at the local authorities' responses reveals that they are also not content with the information provided to date, thereby confirming that the Applicant's reasoning is baseless. We reiterate, basic information remains outstanding.

A document has been submitted by the Applicant with 72 pages detailing an extensive amount of work undertaken to satisfy the noise-related concerns of Holiday Inn [REP5-082]. It is not clear why so much effort has been made for this individual private premises when there are serial concerns spanning across the entire local community which are not being properly addressed.

Ground Noise

3.3.3 GAL discuss that the Slower Fleet Transition case has been assessed within various documents, but do not comment on the wider point that no comparable assessment has been undertaken for the core case, that being the Updated Central Case; UCC.

Their methodology described here is also flawed. They state at the end of 3.3.3:

"This is illustrated in ES Appendix 14.9.3, section 8 where numbers of properties with various noise changes and where road traffic noise is already above predicted ground noise levels are discussed area by area. e.g. in the Longbridge Road Horley Assessment Area where para 8.6.2 notes: 'Under easterly conditions, ground noise is predicted to be 47 dB $L_{Aeq,8hr}$ at the worst-affected location and there are 585 properties in the area that already receive road traffic noise at or above this level'. This Assessment Area has ambient noise levels mainly dominated by road traffic noise from the A23 and other main roads as can be seen in ES Figures 14.6.33 and 14.6.34 that show the baseline road traffic noise levels used in the ground noise assessment."

Any comparison between two noise sources where one is 'at or above the level' could clearly mean that both noise sources are the same level. Where this is the case, one cannot simply discount one of the noise sources as having no effect. However, this is precisely the approach of the Applicant in discounting ground noise effects.

This should be considered alongside the fact that no evidence has been provided to date that it is appropriate to assess ground in the context of the prevailing road traffic noise. We consider the approach taken to be incorrect.

The Applicant also once again references Figures 14.6.33 and 14.6.34 as showing road traffic noise levels, but these do not assist. The road traffic noise contours on these figures are grouped under the following bands:

Day/Evening ($L_{eq,\ 16\ hour}$ dB)	Night ($L_{eq,\ 8\ hour}$ dB)
>60	>54
57	51
54	48
<51	<45

These bandings are clearly insufficient to allow for comparison against ground noise effects where the Applicant uses SOAELs of 63 dB in the daytime and 55 dB in the night-time. Even should any party agree with the approach taken, it is impossible to replicate the assessment and satisfy themselves with the results.

3.3.4 GAL state:

> *"The Applicant appreciates that the situation of high road traffic noise masking ground noise may not occur at other airports, but for Gatwick it was necessary to take this into account to avoid attaching significance to increases in ground noise that would not increase ambient noise levels in some areas."*

It is not clear on what basis GAL state that Gatwick is different to any other major airport with busy nearby roads. For instance, Luton, Stansted and Heathrow all have similar local situations and have assessed (or propose to assess) ground noise in a manner that is quite different to that adopted by GAL. These approaches have been accepted under scrutiny.

It is also not clear that GAL's approach is even consistent with their own statements. Where road traffic noise is at the same level as ground noise, then any increase in ground noise would increase the ambient noise level, contrary to GAL's statement. There are therefore likely to be many properties where a significant noise level has been discounted on this basis, possibly even more than there are properties for which GAL's approach could be considered appropriate.

Further, from closer inspection of the noise contours provided in REP3-071, it would appear that some contours extend beyond the assessed areas, thus meaning fewer properties have been included within the assessment than should be the case.

As we have previously noted in REP4-099, "*The Applicant states that a small number of properties may have been identified compared to air noise. However, this could have been exacerbated by their approach not being sufficiently robust in identifying all properties and does not absolve the Applicant from fully and accurately assessing the effects of ground noise.*" We maintain that this statement is still correct.

NV.1.1 The Applicant has changed their argument here, stating that it is not possible to maintain the bund height at 12m. Their response within REP3-101 states:

> *"Noise modelling of different bund heights was carried out as a sensitivity test to confirm the optimal height. It was found that a height of 10m gave only 0.5dB less attenuation than 12m at the nearest receptor, so 10m was adopted for the preferred design. The height of the bund is 10m and reduces to 8m at its western end due to height restrictions for the main runway."*

The reduction in bund height is contrary to national policy, as we set out in REP4-099.

NV1.5 (8) GAL state:

> *"The ground noise contours provided within the Supporting Noise and Vibration Technical Notes to the Statements of Common Ground [REP3-071] demonstrate the limited potential for significant effects beyond the airport boundary. Below the SOAEL thresholds (represented by these contours), the change in ground noise relative to baseline and the existing road traffic noise become increasingly important as distance increases from the airport boundary. Furthermore, the accuracy of the prediction methodology becomes less reliable at distances beyond 1 km from noise sources since ISO 9613-2 only provides indications of accuracy for distances up to an 'upper limit' of 1000 m. Therefore, presenting ground noise contours in 3 dB increments above the LOAEL threshold would be misleading since the predictions may not represent what can be heard or measured at locations further from the airport boundary (compared to the contours representing the SOAEL thresholds)."*

GAL have been at pains elsewhere to note that the contour provided is not the point at which significance is determined, so it is unclear why they refer to these as the SOAEL threshold here. Such an instance is section 3.1.6 of REP3-071, [our emphasis] "*The number of properties with potentially significant effects related to ground noise is 30 as explained in the following sections (**please note that this is not simply calculated by the number of properties within the contours** at Appendix 2, but also takes account of the change in noise from the Project compared to baseline and also the level of ground noise compared to other ambient noise largely due to road traffic).*"

It is also not clear why ground noise relative to baseline and other noise sources becomes more important at receptors further from the Airport. An explanation is requested.

It is also not clear why GAL discount contour results due to the limitations of ISO 9613-2. Not only are all of their residential assessment areas within 1km of the nearest noise sources, but also such an approach is pre-judging the results before actually producing them. The uncertainty beyond 1km would be the same for both the 'With Development' noise levels as it would be for the 'baseline', and therefore the risk associated with producing this very important comparison tends to be neutralised.

Finally, it is not clear why GAL believe it to be misrepresentative to produce contours down to LOAEL when they have produced these results in a tabulated manner already. The tabulated results could be accused of the same inadequacy, indicating GAL have no confidence in their own results.

Further ground noise responses are made under our REP5-079 response below.

Air Noise

3.3.5 GAL state:

"*In paragraph 5 of this section the CAGNE submission suggests 'if the Slower Fleet Transition case is a sensitivity case, then this should be compared to the Central Case baseline, which forms the most likely baseline, rather than some different baseline as has been done.' The assessment of noise impacts in the ES compares noise levels with the Project with those in the baseline at that point in time. At any point in the future, the fleet operating will have transitioned over time at a given rate to the fleet occurring then, either with or without the Project. So, the comparison being suggested could not occur at any real point in time.*"

It is not clear why GAL state that any such comparison could not occur, as this is precisely how they present their results in the noise chapter [APP-039]. Table 14.9.6 of APP-039 shows this comparison, including in footnote 13.

Table 14.9.6 Air Noise L_{eq} Day and Night Contour Areas with the Project (km²)[13]

Noise Metric	2019	2029	2032	2038	2047
$L_{eq,\ 16\ hour}$ day:					
>51 dB	136	126 - 134.9	125.1 - 146.7	113.7 - 125.7	112.9 - 121.9
>54 dB	74	66.8 - 73.3	66.1 - 80.5	58.7 - 66.8	58.3 - 63.7
>57 dB	38.7	34.4 - 37.8	33.3 - 40.6	29.9 - 33.8	29.7 - 32.2

[13] Ranges cover the central case fleet noise modelling and the slower transition fleet noise modelling.

If GAL are content to submit two separate noise contour areas from the Central Case and Slower Fleet Transition Case as a range, then they must accept that any comparison of a sensitivity case can also be compared to the core case baseline.

3.3.7 GAL have for the third time appeared to misinterpret changes in forecasts to noise changes. They state:

> *"The percentages of Next Generation aircraft are given in ES Appendix 14.9.5 Air Noise Envelope Background [APP-175] and in 2032 are 82% in the Central Case and 50% in the Slower Transition Case. This accounts for the larger noise contours for the Slower Transition Fleet."*

If the larger noise contours are due to a smaller percentage of next generation aircraft within the SFT case, then the noise contours between the CC and SFT would converge as both approach 100%. We have documented that this is not what occurs in REP5-121. Rather, the differences appear to relate to differences between the cases in next generation aircraft within the fleet.

This is an important point as the Applicant should be clear on the causes of noise increases, not least to allow others to understand the application and its environmental implications.

3.3.8 through 3.3.11 The Applicant does not respond to the specific concerns here and instead obfuscates. To summarise the matters to which we need a response:

- It is the Applicant's risk to ensure forecasts are as robust as possible at this point in time and this risk cannot simply be passed to communities through assuming that noisier next generation aircraft will be used. How is this approach robust?

- What evidence has led to the assumptions on noise levels for the Boeing MAX10 aircraft?

REP5-079 Appendix G: Response to the JLAs' Comments at Deadline 4 on the Noise and Vibration Technical Notes

7. The numbering within this section follows the Applicant's paragraph numbering, for ease of reference.

JLA-NVTN-B1 1.1.1 The Applicant asserts that all ground noise sources have been assessed properly, which we contest. Some sources (including EAT's, APU's and EGR) are only assessed in terms of the L_{Amax} index and are not included within the L_{Aeq} index assessment. As per GAL's criteria, significance can only be determined from the L_{Aeq} assessment and therefore removing any noise sources from this assessment is essentially the same as scoping it out. Either significance criteria should be provided for the L_{Amax} assessments, or these noise sources should be included within the L_{Aeq} assessment.

JLANVTN-B2 1.1.3-1.1.4 The Applicant does not see any reason to update their noise chapter, despite having identified errors within the ground noise assessment and having updated their core case. We strongly urge that the Applicant should be required to update their noise chapter, as this would assist them in identifying the missing information which we are requesting.

This point was also raised by Mr Holcombe during ISH8. Simply providing a signposting document is not viewed as acceptable.

JLANVTN-B3 1.1.5 Ground noise contours provided for the Slower Fleet Transition are not necessarily the worst-case, as indicated by the air noise contours, whereby the Updated Central Case contours cover a different geographical extent. The same could easily be true for ground noise as well and therefore contours should be provided for all assessment scenarios in all assessment years.

JLANVTN-B4 3.1.4 The Applicant has not answered the question here and instead repeats their earlier statement.

JLANVTN-B5 3.1.5 The Applicant states that the proposed noise bund is described in section 7 of ES Chapter 14: Noise and Vibration. The only description we can find here is as follows from section 14.7.6:

> *"It would be necessary to remove a bund at the western end of the northern runway in order to allow for alterations to taxiways. This bund currently provides mitigation for ground noise affecting properties in the Charlwood area and it would be replaced with a longer (~500 metres) combination of bund and barrier shifted slightly north and west relative to the existing bund."*

This description is vague and a full description, including dimensions, should be provided.

JLANVTN-B9 5.1.1 The Applicant proves the point being made by the Joint Local Authorities here, highlighting that GAL choose to make comparisons between air, ground and road traffic noise sources as they see fit rather than with any consistency or basis in evidence. The same can be seen in JLANVTN-E4 2.6.8.

JLANVTN-B10 5.1.7 GAL state that the ground noise thresholds only relate to the Noise Insulation Scheme Inner Zone, but this contradicts the actual text within the NIS, whereby in section 4.1.5 of REP4-018 they state:

> *"For ground noise, the same qualifying noise levels would apply* [as with air noise]*"*

JLA-NVTN-E5 2.6.9 The Applicant appears to be arguing that a period of intense engine activity lasting for circa 25 minutes can be reduced down to a single L_{max} event and that this is not appropriate for inclusion within their ambient noise assessment. Separately, irrespective of how many times the noise source occurs, the assessment should compare With Development to baseline, rather than absolute number of occurrences.

ISH8 post-hearing submissions

6.1 Noise Envelopes

8. It is of great concern that the Applicant was unable to answer simple questions during this section of the agenda, including "how much quieter will the fleet be in 2028?" and "has the night-time been prioritised?". This is basic information that should have been included within the documentation from first publication.

9. We reserve the right to comment on the noise envelope once the newly updated noise envelope has been submitted, as stated by Mr Holcombe during ISH8.

10. Mr Holcombe's other high-level comments on noise envelopes, which will be expanded on in our full response to noise envelopes once all information has been received, are:

- There is insufficient information provided by the Applicant detailing a full assessment of the new core case (Updated Central Case) against the new baseline, as detailed in our note REP4-099.

- The temporal scope of the noise envelope is insufficient, as detailed in our note REP2-070.

- The Local Authority are well-placed to monitor and oversee the DCO, should it be permitted.

  Recent experience at Luton Airport with the 19 mppa decision has shown that the Local Authority is the appropriate body to deal with any breaches (or potential breaches) of noise contours and Luton Council drew praise within the Inspector's report when the breach was regularised.

- There is no plan in place, should a breach occur, despite Mr Jarvis's assurances on behalf of the Applicant. We note that the Applicant has accepted submitting measures that would be put in place to prevent a breach occurring (listed as Action Point 16), which are expected to be largely the same measures, such as reducing the number of flights.

11. Although not raised at the hearing, we note that the Applicant appears to not understand the "Green Controlled Growth" framework proposed at Luton Airport within their DCO.

12. The Applicant referred to the GCG framework as backwards looking multiple times, however, this is not the case. Suono reviewed the GCG framework on behalf of the Local Authorities around Luton Airport and ensured that the framework is capable of preventing future breaches, rather than being purely retrospective.

13. Mr Rhodes on behalf of the Applicant also stated thar Stansted, Bristol and Luton all have noise envelopes based solely on the summer period using the L_{Aeq} metric. This is not correct.

14. All three airports have a range of noise controls within their noise envelope, including L_{Aeq} noise contour area limits, movement limits, and Quota Count limits, each applying over different periods. All of the points raised by the Applicant as to why solely using an L_{Aeq} metric generates confidence can therefore be disregarded.

6.2 Noise Insulation Scheme

15. Mr Mitchell on behalf of the Applicant confirmed during ISH8 that "*we will definitely install the inner zone before those significant adverse effects happen at those properties, including the ground noise properties.*" [00:54:41:21 – 00:55:14:29 transcript part 6].

16. The Applicant therefore has ample opportunity to begin installing mitigation within Outer Zone properties at a faster rate than proposed, noting again that the Applicant admits to being able to attend as many properties within one year as they expect to attend in four.

17. We note that the Applicant is yet to respond to our comments that their proposed school insulation scheme is not expected to constitute 'mitigation', but rather is compensation as it would only be in place after a significant may have occurred. The Applicant is unable to confirm if a significant effect is likely to occur at schools or not, as they have not undertaken the relevant assessment. This is detailed within our note REP2-070.

6.3 Noise Effect Thresholds

Air Noise UAELs

18. The Applicant has not set an Unacceptable Adverse Effect Level (UAEL) for air noise. Set out in the table below are UAELs used within other recent airport expansion schemes:

Table 1 Air noise assessment UAELs (dB)

Airport	**UAEL**	
	day	**night**
Luton DCO (not contested) $L_{Aeq,16hour / 8hour}$	69	63
Bristol (permitted) $L_{Aeq,16hour / 8hour}$	69	63
Heathrow (PEIR) $L_{Aeq,16hour / 8hour}$	71	66
Stansted (permitted) $L_{Aeq,16hour / 8hour}$	69	63

19. The Applicant has used values matching Heathrow's to undertake an initial check but, as can be seen in the above table, these are both the highest values and the only values that have yet to be scrutinised.

20. All other schemes use lower threshold values and have been approved. The exception is the Luton scheme, which is still being determined, and the UAEL values used were not contested during the examination. Suono acted on behalf of the five host authorities during the Luton Airport DCO.

21. Through inspection of Table 3.2 within REP4-004, it can be seen that up to 300 people would be exposed to noise above UAEL were threshold values in line with other approved applications.

Ground Noise LOAELs and SOAELs

22. We have set out our concerns that the Applicant's proposed ground noise Lowest and Significant Observed Adverse Effect Levels (LOAEL and SOAEL) are incorrect. This was originally set out in REP1-138, and in multiple more recent submissions, and also now included within this note.

23. The Applicant has offered no justification for these thresholds at any point.

Table 2 Noise issues identified by Suono to date

Topic and Issue	Summary of our understanding of Applicant's position	Summary of Suono's position
Identification of core and sensitivity cases	Updated Central Case replaces Central Case.	UCC is not sufficiently assessed.
Air noise: results for all assessment years	The information provided in the Noise Chapter and Addendum is sufficient.	Results are missing for primary and secondary metrics for the new core case.
Noise envelope limits are too flexible	Noise contour limits set for 14 years into the future only.	Noise policy states that residents must be given certainty, which is not the case.
Providing forecasts used in modelling	Set out in REP3-071 Appendix F	Forecasts provided.
Air Noise UAELs	UAELs not set.	UAELs should be set as per previous permitted applications.
Lack of School Assessment	A school assessment is not necessary.	It is not acceptable to ignore a potentially significant noise effect.
Awakening assessment shortcomings	Awakening assessment only needs to consider air noise.	Awakening assessment should consider air and ground noise together.
Future generation aircraft noise levels not justified	Applicant has not provided any justification, so position is unclear.	Justification should be provided.
Air noise: model assumptions and clarifications	The assumptions used are sufficiently accurate.	Justifications should be provided.
Total aviation noise for air and ground assessments	There is no need to consider both sources cumulatively.	Comparable contours for both assessments should be provided.
Flightpaths	The existing flightpaths can be used.	It has not been demonstrated that the flightpaths are the reasonable worst-case.
Additional noise controls	No additional noise controls are necessary.	There is not enough information to inform what noise controls are necessary.
Noise contour figures (air and ground)	The figures provided are sufficient.	Noise contour figures should be provided using a high-quality Ordnance Survey underlay to allow the identification of residences.

Topic and Issue	Summary of our understanding of Applicant's position	Summary of Suono's position
Noise Insulation Scheme: worsening	The Applicant has updated their NIS as a result of Suono's comments.	There remain outstanding improvements to be made.
Noise Insulation Scheme: policy	The NIS is sufficient.	The Inner Zone should be expanded to cover the 60 dB $L_{Aeq,16hour}$ daytime contour area.
Noise Insulation Scheme: funding	The NIS is sufficient, having been revised as a result of Suono's comments.	The level of funding should be revised upwards to at least match industry best practice.
Noise Insulation Scheme: overheating	The NIS is sufficient.	Mitigation, such as blinds or cooling mechanisms, should be made available to the whole scheme.
Noise Insulation Scheme: ground noise	The NIS is sufficient, having been revised as a result of Suono's comments.	It is not possible to inspect the proposals, as the noise contours provided are insufficient.
Noise Insulation Scheme: clarifications	The NIS is sufficient, having been revised as a result of Suono's comments.	Multiple requests for clarification have been set out in this note.
Noise Insulation Scheme: schools	The NIS is sufficient, having been revised as a result of Suono's comments.	The 'mitigation' offered is actually compensation and does not reduce the likelihood of significant effects occurring.
Fixed mechanical plant noise errors	The Applicant has not updated their original assessment.	The assessment should be updated to account for fundamental errors.
Ground noise: model and assessment descriptions	The information provided in the Noise Chapter is sufficient.	We request a full description and details of the noise model and assessment.
Ground noise: LOAELs and SOAELs	These thresholds should match the air noise assessment.	The Applicant's approach does not align with these thresholds.
Ground noise: EGR splits	The Applicant has provided 60% of split locations.	100% of how locations are split in model should be provided.
Ground noise: providing contours	The Applicant has provided contours at one value only.	Full sets of noise contours should be provided.
Ground noise: results for all assessment years	The Applicant has provided results for only a selection of assessment years.	Results are missing for primary and secondary metrics for the new core and sensitivity cases.
Ground noise: figures showing modelled locations	The information provided in the Noise Chapter is sufficient.	A figure showing where noise sources are located in the ground noise model should be provided.

Topic and Issue	Summary of our understanding of Applicant's position	Summary of Suono's position
Ground noise: baseline measurements	The baseline measurements provided are representative.	The baseline measurements are potentially not representative due to a changing noise climate since 2016.
Ground noise: wind corrections	The wind corrections within the noise model are sufficient.	The wind corrections are not the reasonable worst-case, nor standard industry practice.
Ground noise: taxi speeds	The Applicant states two inconsistent positions in their documentation.	Taxi speeds in APP-075 and APP-173 differ, and the ground noise model could be underpredicting noise effects.
Ground noise: bund heights	The bund and barrier height can be reduced from 12m to 10m.	Reducing the barrier height is contrary to aviation noise policy.
Road traffic noise: assessment traffic flows	There is no need to update the road traffic flows within the noise model with the new core case.	Justification should be provided as to why the road traffic noise model does not need to be updated.